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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/668,448	09/22/2000	Mohammad Ali	4015-755	2160

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RALEIGH, NC 27602

EXAMINER

TRAN, TUAN A

ART UNIT	PAPER NUMBER
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2682

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DATE MAILED: 07/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/668,448

Applicant(s)

ALI, MOHAMMOD

Examiner

Tuan A Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8-13,15-18 and 21-24 is/are rejected.
- 7) ☐ Claim(s) 2,6,7 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 8, 13, 18, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Thompson et al. (5,809,433).

Regarding claim 1, Thompson discloses a mobile terminal 100 (See fig. 1) comprising: a body 101; a flip portion 103; and a hinge 518 connecting the body and the flip portion, the hinge 518 comprising hinge plates 107 that function as an antenna for use by an electronic circuit 315 positioned within the mobile terminal (See figs. 1, 3-4, 7-8 and col. 3 lines 10-37, 61-65, col. 5 lines 49 to col. 6 lines 20).

Claims 13 and 21 are rejected for the same reasons as set forth in claim 1, as method.

Regarding claim 8, Thompson discloses as cited in claim 1. Thompson further discloses the mobile terminal further comprising a printed circuit board 315 adapted to hold the electronic circuit (See fig. 3 and col. 3 lines 50-60).

Regarding claim 18, Thompson discloses as cited in claim 13. Thompson further discloses the step of opening and closing the hinge during operation of the mobile terminal (See col. 6 lines 7-20).

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Regarding claim 22, Thompson a mobile terminal 100 (See fig. 1) comprising: a body 101; a printed circuit board 315 positioned within the body 101; an electronic circuitry 515 positioned on the printed circuit board 315; at least one antenna 110 for voice communications at a first operating frequency, the antenna operatively connected to the electronic circuitry 515; a flip portion 103; a hinge 518 including hinge plates 107 functioning as an auxiliary antenna connecting the flip portion 103 to the body 101, the auxiliary antenna operatively connected to the electronic circuitry 515, the auxiliary antenna for communication at a second operating frequency (See figs. 1, 3-4, 7-8 and col. 3 lines 10-37, 61-65, col. 5 lines 49 to col. 6 lines 20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3-5, 9-12, 15-17 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (5,809,433).

Regarding claims 3-5, Thompson discloses as cited in claim 1. However, Thompson does not mention that the antenna: is operative at frequencies between 2.4 and 2.485 GHz (Bluetooth) or within the ISM band; or receives a GPS signal. Since Thompson suggests that the antenna of the mobile terminal as cited in claim 1 can be configured to operate at multiple frequency bands (See col. 6 lines 15-20) and Bluetooth

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or ISM band or GPS signal is well known in the art; therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the antenna such that it can operate at frequencies between 2.4 and 2.485 GHz (Bluetooth) or within the ISM band; or receives a GPS signal in order to expand the capability of the mobile terminal to various frequency modes.

Claims 15-16 are rejected for the same reasons as set forth in claims 3-5, as method.

Regarding claims 9-12, Thompson discloses as cited in claim 8. The antenna of the mobile terminal is inherently attached (or connected) to the printed circuit board by at least a fastener in order to operate the mobile terminal. However, Thompson does not mention that the antenna is fastened to the printed circuit board using a first fastener as connection to ground and a second fastener as an RF feed, wherein the fastener are screws. Since antenna structure inherently comprises a ground connection and a RF feed connection and using screws as conductive fasteners is a common technique in the art; therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use screws as fasteners as well as connections of the antenna with the printed circuit board for the advantage of securing an electrical connection between the antenna and the rest of the circuitry to allow the mobile terminal to operate properly.

Claims 17 is rejected for the same reasons as set forth in claims 9-12.

Regarding claims 23-24, Thompson discloses as cited in claim 22. However, Thompson does not mention that the antenna: is operative at frequencies between 2.4

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and 2.485 GHz (Bluetooth); or receives a GPS signal. Since Thompson suggests that the antenna of the mobile terminal can be configured to operate at multiple frequency bands (See col. 6 lines 15-20) and Bluetooth or ISM band or GPS signal is well known in the art; therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the antenna such that it can operate at frequencies between 2.4 and 2.485 GHz (Bluetooth); or receives a GPS signal in order to expand the capability of the mobile terminal to various frequency modes.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rabe (U.S. 5,832,079); Phillips et al. (U.S. 5,014,346).

Allowable Subject Matter

3. Claims 2, 6-7 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 6-7, Thompson discloses as cited in claim 1. However, Thompson does not mention that the mobile terminal further comprising a second hinge that comprises second hinge plates functioning as a second antenna.

Regarding claims 2 and 14, Thompson discloses as cited in claims 1 and 13. However, Thompson fails to mention that the hinge functioning as an inverted-F antenna.

4. Claims 19-20 are allowed.

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The following is an examiner's statement of reasons for allowance:

The reason has been indicated in the Office Action mailed 01/28/2004

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

a. Upon the Applicant's request, the Examiner confirms that the Office Action mailed 01/28/2004 based on the amendments submitted on November 13, 2003, that has been entered.

b. Applicant's arguments, see (Remark, page 8 last paragraph), filed 04/28/2004, with respect to 103 rejections have been fully considered and are persuasive. The rejections have been withdrawn.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan Tran** whose telephone number is **(703) 605-4255**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Vivian Chin**, can be reached at **(703) 308-6739**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

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WAW

Tuan Tran

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